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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,282	07/06/2000	Mohammad A. Abdallah	42390.P9147	4900

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EXAMINER	
TREAT, WILLIAM M	

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/611,282	ABDALLAH ET AL.	
	Examiner	Art Unit	
	William M. Treat	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-18 and 22-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7,8 and 12-30* is/are rejected.

7)☒ Claim(s) *9-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-30 are presented for examination.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (f) he did not himself invent the subject matter sought to be patented.

3. Claims 7-8, 12-18, and 22-29 are rejected under 35 U.S.C. 102(a, e, f) as being clearly anticipated by Morrison (Patent No. 6,170,052).

4. The examiner would suggest applicants read col. 4, line 10 through col. 5, line 45, col. 6, lines 1-4, and col. 8, lines 33-42, at a minimum, before responding.

5. Applicants have argued on behalf of independent claim 7 that Morrison does not teach or suggest the execution of instructions from both first and second paths, associating a condition with the results of execution of the instructions of both paths, and retirement of the correct result. The examiner would direct applicants' attention to col. 6, lines 1-4 where it states that "the predicate evaluating micro-op 37 and the associated pair of renamed conditional micro-ops 38, 39 are executed on one or more of the execution units 62, 64." Element 80 of Fig. 6 also states: "EXECUTE PREDICATE AND PAIRED CONDITIONAL MICRO-OPS". At col. 4, lines 30-34 it explains: "The first and second conditional micro-ops 32, 33 have the same logical destination register Z. The second conditional micro-op 33 restores a data previously stored in the register Z back in the same register Z when the predicate is false." If applicants will review

their specification, they will find this same type of situation as one described as executing an instruction from the first and second paths, etc. Quite clearly, Morrison has executed instructions from both paths and which value is ultimately used for subsequent processing is clearly contingent on the associated predicate value. The examiner considers it inherent in Morrison's system that only one value for Z will ultimately be used/retired/commited and that value will be determined based on the associated predicate. Otherwise, Morrison's system would produce unreliable results and would not constitute an invention worthy of a patent. Applicants made similar arguments for the balance of applicants' claims but they lack merit for the reasons set forth above. Also, though the language argued for claim 22 wouldn't distinguish over Morrison, the examiner would point out that language is absent from claim 22. Finally, the examiner would point out Morrison clearly intends a memory for storing the predicates/conditions as claimed in claim 16 (see elements 31 and 37 of Figs. 3 and 4, respectively). Applicants' retire unit in claim 16 is merely circuitry that makes sure it is the correct predicated result which is used subsequently. Inherently, Morrison has such circuitry or his system won't work. Applicants' reorder buffer, as claimed in claim 28, merely stores the results of executed micro-operations. Inherently, Morrison meets such a meager limitation or, once again, his system would not work.

6. Claims 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. In independent claim 22, designated by applicants as "Currently Amended", applicants claim a dispatch unit "comprising" without specifying what it comprises. As a result, dependent claims 23-25 are also are indefinite.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kates (Patent No. 5,430,641) in view of Carter et al. (Predicated Static Single Assignment).

11. Kates substantially taught the invention of claims 26 and 30 including a computer system comprising a processor to perform operations, a memory to store instructions of a program, a memory controller hub to provide an interface to the memory, and an input/output controller hub coupled to the memory controller hub (Figs. 3A, 3B, and 3E). Kates did not teach performing both a first operation designated by a conditional instruction to produce a first result and a second operation to produce a second result, to associate both the first result and the second

result with a condition associated with the conditional instruction, and to retire the first result or the second result based on how the condition is resolved.

12. However, Carter taught that "performing both a first operation designated by a conditional instruction to produce a first result and a second operation to produce a second result, to associate both the first result and the second result with a condition associated with the conditional instruction, and to retire the first result or the second result based on how the condition is resolved" was known in the art at the time of applicants' invention (first two sentences of the abstract of the article on the first page of the article). As noted by Carter, one of the advantages of predicated execution such as applicants are claiming is that it can eliminate hard to predict branches by combining both paths into a single branch (first sentence of the last paragraph in column one of the first page of the article). One of ordinary skill in the art would be motivated to enhance the branch processing capabilities of the Dell laptop's processor by using predicated execution to eliminate hard to predict branches. The examiner also takes official notice of the fact that it was conventional at the time of applicants' invention for Dell laptop processors to use branch prediction.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Miki et al. (Patent No. 6,052,776).

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

16. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication should be directed to William M. Treat at telephone number 703 305 9699. The examiner works at home on Fridays but may normally be reached on Fridays by leaving a voice message on his office phone. The examiner also works a flexible schedule but may normally be reached in the afternoon and evening on three of the four remaining weekdays.

WILLIAM M. TREAT
PRIMARY EXAMINER